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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/056,845	01/22/2002	Jeffrey D. Jordan	LAR 16307-1-SB	6048

23351 7590 08/30/2005

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION  
LANGLEY RESEARCH CENTER  
MAIL STOP 141  
HAMPTON, VA 23681-2199

EXAMINER

NGUYEN, CAM N

ART UNIT PAPER NUMBER

1754

DATE MAILED: 08/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

*Interview Summary*

Application No.

10/056,845

Applicant(s)

JORDAN ET AL.

Examiner

Cam N. Nguyen

Art Unit

1754

All participants (applicant, applicant's representative, PTO personnel):

(1) Examiner Cam N. Nguyen.

(3) \_\_\_\_\_.

(2) Attorney/Agent Helen Galus.

(4) \_\_\_\_\_.

Date of Interview: 17 August 2005.

Type: a) ☒ Telephonic b) ☐ Video Conference

c) ☐ Personal [copy given to: 1) ☐ applicant 2) ☒ applicant's representative]

Exhibit shown or demonstration conducted: d) ☐ Yes e) ☒ No.

If Yes, brief description: \_\_\_\_\_.

Claim(s) discussed: All.

Identification of prior art discussed: as applied.

Agreement with respect to the claims f) ☐ was reached. g) ☒ was not reached. h) ☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: Proposed amendment discussed. The proposed changes does not appear adding new matter to the claims. Examiner indicated will update the search.

*\*proposed amendment attached.*

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN ONE MONTH FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

*Cam Nguyen*  
CAM N. NGUYEN  
PRIMARY EXAMINER

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

\_\_\_\_\_  
Examiner's signature, if required

*8/17/05*

## Summary of Record of Interview Requirements

### Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record

A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

### Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews

#### Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

#### 37 CFR §1.2 Business to be transacted in writing.

All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:

- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:

- 1) A brief description of the nature of any exhibit shown or any demonstration conducted,
- 2) an identification of the claims discussed,
- 3) an identification of the specific prior art discussed,
- 4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
- 5) a brief identification of the general thrust of the principal arguments presented to the examiner,  
(The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
- 6) a general indication of any other pertinent matters discussed, and
- 7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

#### Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.



**National Aeronautics and Space Administration  
Langley Research Center**

**Intellectual Property Law Team  
Office of Chief Counsel  
MS 141  
Hampton, VA 23681-2199**



**FAX Cover Sheet**

<b>To</b>	<u>Examiner Cam Nguyen</u>	<b>Company</b>	<u>U.S.P.T.O</u>
<b>Fax</b>	<u>703-872-9306</u>	<b>Phone</b>	<u>571-272-1357</u>
<b>Subject</b>	<u>10/056,845</u>		
<hr/>			
<b>From</b>	<u>Helen M. Galus</u>	<b>E-Mail</b>	<u>Helen.M.Galus@nasa.gov</u>
<b>Fax</b>	<u>757-864-9190</u>	<b>Phone</b>	<u>757-864-3227</u>
<b>Date</b>	<u>8/17/05</u>	<b>Pages</b>	<u>7</u> (including this cover sheet)

Dear Examiner Nguyen,

Transmitted herewith is a draft supplemental amendment for discussion purposes during our 2pm interview today (it has not been filed).

Thank you.

**DRAFT**

Cordially,  
Helen Galus

The documents accompanying this transmission contain proprietary, confidential, and/or legally privileged information and are intended only for the use of the individual or entity named on the transmission sheet. If you are not the intended recipient, you are hereby notified that any disclosure, copying, distribution, or the taking of any action in reliance on the contents of this telecopied information is strictly prohibited and that the documents should be returned to the sender immediately. In this regard,

**DRAFT DOCUMENT FOR DISCUSSION DURING EXAMINER INTERVIEW ONLY**

Application No. 10/056,845

Second Supplemental Amendment dated August 17, 2005

Practitioner's Docket No. LAR 16307-1-SB

**PATENT APPLICATION****IN THE UNITED STATES PATENT AND TRADEMARK OFFICE****DRAFT**

In re Application of: Jeffrey D. Jordan et al.

Application No.: 10/056,845

Examiner: Cam M. Nguyen

Filed: January 22, 2002

Art Unit: 1754

For: Methodology for the Effective Stabilization of Tin-Oxide-Based Oxidation/Reduction Catalysts

**DRAFT SECOND SUPPLEMENTAL AMENDMENT – NOT TO BE ENTERED**

Sir:

In further response to the Office Action of February 9, 2005 and the Advisory Action dated April 21, 2005, please consider this Second Supplement Amendment in conjunction with the Amendment dated April 8, 2005 and the Supplemental Amendment filed on April 27, 2005. Please amend the above-identified application as follows:

**Amendments to the Claims** begin on page 2 of this paper.**Remarks/Arguments** begin on page 4 of this paper.

**DRAFT DOCUMENT FOR DISCUSSION DURING EXAMINER INTERVIEW ONLY**

Application No. 10/056,845

Second Supplemental Amendment dated August 17, 2005

**AMENDMENTS TO THE CLAIMS**

1. (Currently Amended) A low-temperature oxidation-reduction catalyst comprising:  
a noble metal selected from the group consisting of platinum, palladium, gold, silver and rhodium;  
a mixed-metal oxide layer comprising:  
a first metal oxide which possesses more than one stable oxidation state including at least tin oxide;  
a second metal oxide including at least zirconium oxide; and  
~~said catalyst does not comprise any halogen components~~  
a third metal oxide selected from the group consisting of cerium oxide, hafnium oxide, lanthanum oxide, and ruthenium oxide; and  
said first, second and third metal oxide each being an active catalytic component of said mixed-metal oxide layer.
2. (Cancelled) ~~A low-temperature oxidation-reduction catalyst of claim 1, further comprising a third metal oxide selected from the group consisting of cerium oxide, hafnium oxide, lanthanum oxide, and ruthenium oxide.~~
3. (Currently Amended) A low-temperature oxidation-reduction catalyst of claim 2 1, wherein said third metal oxide is cerium oxide.
4. (Currently Amended) A low-temperature oxidation-reduction catalyst of claim 2 1, wherein said first metal oxide, second metal oxide, and third metal oxide have a mass ratio of about 1.0: 0.5: 0.5.
5. (Previously Presented) A low-temperature oxidation-reduction catalyst of claim 1, further comprising a promoter selected from the group consisting of oxides of the metals of the

(L0031775:1)

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transition series of the periodic table of elements, wherein the promoter is present in an amount sufficient to provide from about 1 to about 12 atom percent of promoter metal to tin metal.

6. (Previously Presented) A low-temperature oxidation-reduction catalyst of claim 1, wherein said noble metal is from about 1 to about 50 weight percent, based on the total weight of the catalyst; and the first and second metal oxide are collectively from about 50 to about 99 weight percent, based on the total weight of the catalyst.

7. (Previously Presented) A low-temperature oxidation-reduction catalyst of claim 1, for use in the oxidation of carbon monoxide.

8. (Previously Presented) A low-temperature oxidation-reduction catalyst of claim 1 for use in the oxidation of formaldehyde.

9. (Previously Presented) A low-temperature oxidation-reduction catalyst of claim 1 for use in the oxidation of volatile organic compounds.

10. (Previously Presented) A low-temperature oxidation-reduction catalyst of claim 9, wherein the volatile organic compounds are hydrocarbons.

11. (Previously Presented) A low-temperature oxidation-reduction catalyst of claim 1 for use in the reduction of nitrogen oxide species.

12.-16 (Cancelled)

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**REMARKS/ARGUMENTS****Rejection Under 35 U.S.C. § 102:**

The Examiner has rejected Claim 1-11 under 35 U.S.C. 102 (e) as being anticipated by Bogdan et al, (US Pat. 6,495,487 B1). The Applicants respectfully submit that the Bogdan reference does not anticipate the instant invention.

A rejection under 35 U.S.C. §102 must disclose the identical invention and contain every element recited in the claim in as complete detail as is contained in the claim and arranged as recited in the claim. MPEP §2131 provides:

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described in a single prior art reference. *Verdegall Bros. v. Union Oil Co. Of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the . . . claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim.

The Applicants respectfully argue that the Bogdan reference does not disclose the identical invention, in as complete detail as is contained in Claim 1. Nor does the Bogdan reference disclose every element as set forth in the claim.

Amended Claim 1 recites:

1. A low-temperature oxidation-reduction catalyst comprising:
  - a noble metal selected from the group consisting of platinum, palladium, gold, silver and rhodium;
  - a mixed-metal oxide layer comprising:
    - a first metal oxide which possesses more than one stable oxidation state including at least tin oxide;
    - a second metal oxide including at least zirconium oxide;
    - a third metal oxide selected from the group consisting of cerium oxide, hafnium oxide, lanthanum oxide, and ruthenium oxide; and
    - said first, second and third metal oxide each being an active catalytic component of said mixed-metal oxide layer.

Support for this amendment to Claim 1 can be found in the originally filed specification

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in the final line on page 3, and on page 4 lines 6-14.

It is respectfully submitted that the Bogdan reference does not disclose the recited mixed-metal oxide layer comprising at least tin oxide, zirconium oxide and a third metal oxide selected from the group consisting of cerium oxide, hafnium oxide, lanthanum oxide, and ruthenium oxide, and wherein said first, second and third metal oxide each is an active catalytic component of said mixed-metal oxide layer.

Unlike the present invention, the Bogdan catalyst does not use zirconia as an active component. Rather the Bogdan catalyst utilizes zirconia as a refractory inorganic oxide support. The Bogdan reference states:

The refractory support utilized in the present invention usually is a porous, adsorptive, high-surface area support...Included within the scope of the present invention carrier are materials which have traditionally been utilized in dual-function hydrocarbon conversion catalyst such as:

1) refractory inorganic oxides such as alumina, magnesia, titania, zirconia, chromia, zinc oxide, thoria, boria, silica-alumina, silica-magnesia, chromia-alumina, alumina-boria, silica-zirconia, etc.; ...

Preferably the refractory support comprises one or more inorganic oxides, with the preferred refractory inorganic oxide for use in the present invention being alumina. (Bogdan col.4, line 1-17.)

Because the Bogdan reference does not disclose a catalyst comprising tin oxide, zirconium oxide, and a third metal oxide selected from the group consisting of cerium oxide, hafnium oxide, lanthanum oxide, and ruthenium oxide; wherein said first, second and third metal oxide each being an active catalytic component of a mixed-metal oxide layer, it is respectfully contended that the Bogdan reference does not disclose every element as recited in Claim 1, nor does it disclose the identical invention as recited in Claim 1, therefore the Bogdan reference does not anticipate the present invention.

Therefore, based on the above, independent Claim 1 is believed to fully distinguish from the Bogdan reference, and therefore is believed to be in condition for allowance. Since claims 3-11 all depend from independent Claim 1, they too are believed to be in condition for allowance by virtue of this dependency. Therefore, in light of the above, reconsideration and withdrawal

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of the present rejection is respectfully requested.

**CONCLUSION**

It is submitted that the Applicants have submitted new and unique Stabilized Tin-Oxide-Based Oxidation/Reduction Catalysts. In view of the above, it is submitted that Claims 1, and 3-11 are in condition for allowance. Therefore, it is requested that a Notice of Allowance be issued at an early date.

Respectfully submitted,

**DRAFT**

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